

Improve Dx

THE NEWSLETTER OF THE
SOCIETY TO IMPROVE DIAGNOSIS IN MEDICINE
VOLUME 2 • NUMBER 1
JANUARY 2015

Nurses and Diagnosis: A New Vision

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Nurses participate in the diagnostic process in different ways, depending on experience, training, certification, state regulations, and the culture of the organizations in which they practice. Recent changes in healthcare delivery present new opportunities, especially in primary care, for nurses to improve the diagnostic process. These changes also pose new opportunities for partnership with other clinicians, especially physicians.

Traditional Roles

The actions of registered nurses (RNs) delivering direct patient care in hospitals hold true to the traditional model of nursing: observe, assess, document, communicate, and advocate (for the patient). Nurses supply physicians with critical information about patients from monitoring, testing, and their own observations, as well as information from patients and their family members. Although nurses are well positioned to provide feedback on the original diagnosis, they have not generally perceived this to be one of their prime responsibilities.

The contributions frontline nurses make to the diagnostic process, although secondary to the physician's responsibility, should not be underestimated. When nurses and physicians work together as a team in a respectful environment, patients benefit from the best of both worlds. Information sharing and collaboration lead to better diagnosis. When professional relationships are sub-par and communication is lacking, patient care—including diagnosis—suffers.

Nursing Diagnosis vs. Medical Diagnosis

To arrive at a *medical diagnosis*, clinicians—most often but not always physicians—consider a patient's symptoms, history, and findings to assign a diagnosis and establish the patient's care, treatment, and prognosis.

Nursing diagnosis is based on observation and assessment of a patient's ongoing condition, often augmented with information from monitoring and testing. Nursing diagnosis results in adjustments to the patient's care regimen such as physiological monitoring, positioning, and activities.

APRNs and Diagnosis

In growing numbers, RNs are pursuing advanced degrees and certifications that allow direct responsibility for patient care, including "assessment, diagnosis and management of patient problems" and prescription of medications and medical treatment.^{1(p2)} An advanced practice registered nurse (APRN) may be certified as a nurse midwife (CNM), registered nurse anesthetist (CRNA), clinical nurse specialist (CNS), or nurse practitioner (CNP).²

Nurse practitioners (NPs) constitute more than half of APRNs¹ and deliver a substantial and growing proportion of primary care in the United States.³ Pauly et al report that data from the US Health Resources and Services Administration show the percentage of patients receiving primary care from NPs in 2010 (vs. from physicians and physician assistants) was highest in pediat-

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Better Outcomes Through Better Diagnosis

rics (18% of patients ages 0 to 5 years) and geriatrics (19.8% of patients ages 65 to 75 years and older)⁴ Pauly and colleagues cite a study by Kuo et al⁵ that found a 15-fold increase between 1998 and 2010 in the number of Medicare patients who received care from an NP.⁴

The shift to non-physician providers in primary care and other specialties—often NPs—is very real and widespread.

In the United States, delivery models are adapting to economic pressure, interest in value-based purchasing, healthcare reform, and physician shortages. The shift to non-physician providers in primary care and other specialties—often NPs—is very real and widespread. States vary in the privileges given to NPs: some states allow them to practice independently and some not. NPs, as well as physician assistants (PAs), offer many patients and families a choice for care that is convenient and cost-effective. For those who have been underserved, they may offer the only option for care.

The increasingly independent roles played by NPs have generated discussion and controversy. Donelan et al conducted a national survey of 505 physicians and 467 nurse practitioners between November 23, 2011, and April 9, 2012, on topics related to the expanding role of nurse practitioners.⁶ Not surprisingly, they found the two groups hold opposing views about scope of practice, compensation, and other related topics. The American Academy of Family Physicians contends that:

The family physician is trained to provide a complex differential diagnosis, develop a treatment plan that addresses multiple organ systems, and order and interpret tests within the context of the patient's overall health condition. ... the education and training of physicians and APRNs are substantially different, and physicians and nurses are not interchangeable.^{7(p8)}

After conducting a literature review in 2010 to evaluate primary care delivered by APRNs, Naylor and Kurtzman recommended advancing the practice of APRNs by standardizing state laws, compensating according to services rendered (not according to licensure), and measuring and reporting performance of APRNs who provide primary care.⁸ Those recommendations parallel

the conclusions of *The Future of Nursing: Leading Change, Advancing Health*, published in 2010 by the Institute of Medicine.⁹

Measuring Comparative Performance

As staffing patterns in ambulatory medicine become more complex, so, too, does the challenge of understanding adverse events, including diagnostic error. According to Dana Siegal, director of patient safety services for CRICO Strategies, “It’s harder to evaluate where things go wrong if the roles aren’t clear” (oral communication, December 2014). Given that most diagnostic failures occur in ambulatory settings,^{10,11} there is concern about the quality of care that traditionally has been delivered by physicians now being delivered by others, including advanced practice nurses and nurse practitioners.

Data on the relative diagnostic performance of nurse practitioners in compared to their physician colleagues are limited; the available studies show no major differences in some settings:

- Researchers presented a new complex case scenario to a sample of 30 NPs and 16 physicians across specialties in New Zealand and compared the “diagnostic reasoning abilities” of the two groups.¹² A panel of experts found no significant difference in diagnostic accuracy, problem identification, or proposed actions between the two groups.
- A study in the Netherlands in 2008 found “no significant difference” between emergency nurse practitioners and junior doctors/senior house officers in diagnostic accuracy for minor illness and injuries.¹³
- In claims data from 2009 through 2013, CRICO found no significant difference in diagnosis performance between advanced practice clinicians (APCs)—PAs and APRNs—and physicians. Siegal adds, “When looking at the top contributing factors, both APC and MD cases are driven by the same clinical judgment issues, specifically a narrow diagnostic focus reflected in the lack of appropriate testing and clinical consultation” (email correspondence, January 2015).

Envisioning New Roles

Team performance has been found to be a critical determinant of quality in many settings, and medical care is no exception. Are nurses part of the diagnostic team? “Definitely,” according to

ImproveDx is a bimonthly publication of the not-for-profit Society to Improve Diagnosis in Medicine (SIDM). The opinions expressed in this publication are not necessarily those of the Society to Improve Diagnosis in Medicine or its Board of Directors.

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Nurses need to appreciate the unique role they can play to improve the reliability of diagnosis. First, they can help ensure communication has been optimized between the patient and the physician. Second, they can and should act as a second set of eyes, helping make sure that the patient's course matches the assigned diagnosis.

Graber goes on to propose major changes in nursing education for the APRNs and NPs who will be acting as primary diagnosticians:

Nurses acting in a diagnostic role need much of the same training physicians receive to be effective in differential diagnosis. They also need the training we are advocating for MDs, PAs and everyone else giving diagnoses to patients, training that focuses on how to prevent diagnostic errors. This should include education on cognition, and both cognitive- and system-related error. This training should be inter-professional, the first step in developing diagnostic teams (written communication, January 2015).

Examining the important roles that nurses play across all specialties and settings should be included in ongoing efforts to improve diagnosis. In addition, allowing all clinicians to practice to the full extent of their education and training and ensuring that care teams collaborate effectively will help meet a growing demand for care—especially primary care—that fulfills the aims proposed by the Institute of Medicine: “safe, timely, effective, patient-centered, timely, efficient, and equitable.”^{14(p5,6)}

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SIDM Gains Momentum; Big Plans for 2015

By Mark L. Graber,
Founder & President,
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The president's
in-depth reports
about SIDM activities
are available on the
SIDM website,
under About Us.

The New Year is a perfect time to assess what progress our Society has made in 2014 and what lies ahead in 2015.

2014 was highlighted by the 7th Diagnostic Error in Medicine (DEM) conference, attended by 250 participants from the US and around the world. The year was also notable for landmark events, including: the Institute of Medicine accepted SIDM's proposal to examine diagnostic error (the report will be issued this fall), the National Patient Safety Foundation chose diagnostic error as the theme for Patient Safety Awareness Week and collaborated with SIDM on multiple activities, and SIDM launched two publications: a peer-reviewed journal, *DIAGNOSIS*, and bimonthly newsletter, *ImproveDx*.

In 2015, SIDM will...

- participate in an AHRQ-sponsored grant to study what patients are willing to do to improve diagnostic quality,
- develop curriculum content for undergraduate trainees on diagnostic error,
- develop fellowship opportunities for post-graduate trainees to focus on diagnosis and diagnostic error,
- provide assistance to patients courtesy of SIDM-affiliated medical librarians, and

- sponsor DEM 2015, centered on the IOM report.

A highlight of my year was starting to hear the lingo of diagnostic error being used on the wards in health organizations across the country. The issue, at long last, is gaining traction.

You don't have to tell me your New Year's resolution, but here's mine:

Do whatever I can to make sure the IOM report on diagnostic error is seen by every physician and CMO in the nation (and a lot of patients, too).

Publication of the IOM report will be the best opportunity we've had in a decade to mobilize ALL of the stakeholders and start changing practices. Please consider making a donation to our campaign to develop a public relations program for the IOM report—all donations will be matched. For more information, visit:

[http://www.improvediagnosis.org/
?DiagnosticErrorAware](http://www.improvediagnosis.org/?DiagnosticErrorAware)

We will never achieve the quality of health care we want until the problem of diagnostic error is addressed. Thanks to everyone reading this for helping to do just that.

NEWS FROM THE FIELD

When Consulting Decision Support Systems, Timing Matters

Early diagnostic suggestions improve accuracy of GPs: a randomized controlled trial using computer-simulated patients.

Kostopoulou O, Rosen A, Round T, Wright E, Douiri A, Delaney B.

Br J Gen Pract. 2015. doi:10.3399/bjgp15X683161.

Accessed January 8, 2015.

Researchers at the School of Medicine at King's College in London recognized two limitations with the operation of "typical" computerized diagnostic support systems (CDSS):

- Physicians decide if and when to consult CDSS for help (which they do rarely).
- When physicians consult CDSS, they tend to do so late in the process of forming a diagnosis, when they already may be biased toward a decision. That influences the patient-related information they enter into the CDSS and how willing they are to consider new suggestions.

To test the effect of timing on CDSS, Kostopoulou et al designed a randomized controlled trial in which 297 general practitioners diagnosed nine computer-based simulated patients. The physicians were separated into three

groups: a control group that did not use CDSS; a group that received diagnostic suggestions late in the process, after they had already formed a diagnosis (representing current, "typical" practice); and a third group that received suggestions early, after entering only the patient's background information (age, sex, risk factors, medications, and medical history) and the reason for the encounter. The simulated patients presented with diagnoses that ranged from simple to complex.

Physicians in the group that received early support from CDSS were more likely to deliver an accurate diagnosis than physicians in the other two groups, whose performance was roughly equivalent. The early support group was 1.31 times more likely than the others to reach the correct diagnosis. The authors have developed a prototype CDSS that is based on the principle of early support and integrates with an electronic health record.